DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 3, 6-11, 14-19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima (JP 4-335557) in view of Nakazato et al (EP 0 741 269) and further in view of Cheon (2004/0008483) and Novotny et al (7,252,139).

Nakajima discloses a cooling installation (Fig. 1) for cooling electronic equipment and thus capable of cooling a switchgear cabinet (see English language abstract) including a heat exchanger or a plurality of parallel operated heat exchangers (12 in Fig. 1) housed in a heat exchanger cabinet (3) having an interior coupled to an air inlet opening and an air outlet opening (Fig. 1), cold air supplied to the cabinet being conducted over a heat exchanger and cooling a coolant flowing therein (Fig. 1), a water inflow and return flow of one of the heat exchange being connected with a feed line and return line of each of the switchgear cabinets to be cooled (at 12 in Fig. 1), the parallel heat exchangers being arranged horizontally aligned (Fig. 1) and nearly fill the interior of the heat exchanger cabinet (Fig. 1), a pump (10) in the water flow line, a fan positioned on the heat exchanger cabinet and having an opening connected with the interior

(Fig. 1), a fan removing air from the interior (Fig. 1), an air inlet located in the cabinet bottom (Fig. 1), the heat exchanger (5) extending over an entire height of the interior (Fig. 1), the parallel heat exchangers (12) being arranged on top of each other (Fig. 1).

Nakajima does not appear to disclose part of the cold air being fed from the double bottom into the interior and remaining cold air being conducted further in the double bottom.

Nakazato et al disclose a cooling installation where part of the cold air is fed from the double bottom into the interior and the remaining cold air is conducted further in the double bottom.

It would have been obvious in view of Nakazato et al to provide air flow arrangements in which part of the cold air is fed from the double bottom into the interior and the remaining cold air is conducted further in the double bottom for the cooling installation of Nakajima, the motivation being to enable use of the cooling system to cool multiple cabinets or devices.

Nakajima and Nakazato et al do not appear to disclose an individual pump connected in the feed line of each of the heat exchangers and an expansion vessel additionally connected in the feed line of an uppermost one of the parallel heat exchangers.

Cheon discloses an electronic cabinet cooling system including an individual pump (33) connected in the feed line of each of the heat exchangers in the interior of the heat exchanger cabinet (see Fig. 10).

It would have been obvious in view of Cheon to use an individual pumps connected in the feed line of each of the heat exchangers of Nakajima in view of Nakazato et al, the motivation being to enable controlling flow to individual heat exchangers.

Novotny et al discloses an expansion vessel (67) connected to a liquid cooling system for electronic circuitry.

It would have been obvious in view of Novotny et al to use an expansion vessel connected the heat exchangers of Nakajima in view of Nakazato et al, the motivation being to compensate for fluid expansion.

3. Applicant's arguments filed 29 October 2009 have been fully considered but they are not persuasive.

Applicant's amendment has overcome the objection to claims 3, 14, 16, and 19.

Applicant argues that the references do not disclose a plurality of air water heat exchanger housed in a heat exchanger cabinet and operated in parallel within the heat exchanger. Nakajima discloses chilled air in blown through a heating cabinet which includes liquid heat exchangers operated in parallel and Cheon discloses a plurality of water heat exchangers housed in a heat exchanger cabinet and operated in parallel within the heat exchanger.

Applicant argues that the references do not disclose an individual pump connected with each of the heat exchangers. However, Cheon discloses an individual pump (31) connected to each of a plurality of heat exchangers.

Applicant argues that the electronic devices of Cheon are not equivalent to applicant's heat exchangers. However, the electronic devices of Cheon include heat exchangers connected in parallel, and meet the terms of the current claims.

Applicant argues that the pumps of Cheon are outside the heat exchanger unit. However, the pumps are considered to be within the housing of the heat exchanger.

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Teresa J. Walberg whose telephone number is 571-272-4790. The examiner can normally be reached on M-F 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Teresa J. Walberg/
Primary Examiner, Art Unit 3744

/TW/